Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently amended) A cell-specific and/or tumor-specific herpes viral mutant, comprising:

(a) a deletion or inactivating mutation in both copies of the gene encoding γ34.5; and

(b) an insertion of ~~wherein~~ at least one copy of the γ34.5 gene ~~is operatively linked to and~~ under the transcriptional control of a cell-specific and/or tumor-specific promoter, such that said herpes viral mutant is capable of selective cell- and/or tumor-specific ~~targeting~~ targeted expression.

2. (Original) The herpes viral mutant of claim 1, wherein said herpes virus is herpes simplex virus type 1.

3. (Original) The herpes viral mutant of claim 1, wherein said herpes virus is herpes simplex virus type 2.

4-12. Cancelled

13. (Previously presented) The herpes viral mutant of claim 2, wherein said tumor-specific promoter is DF3 (MUC1), alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), prostate specific antigen (PSA), tyrosinase, B-*myb*, or c-*erb*B2.

14. (Previously presented) The herpes viral mutant of claim 13, wherein said tumor-specific promoter is B-*myb*.

15. (Currently amended) The herpes viral mutant Myb34.5 as represented by ATCC Patent Deposit Designation PTA-4963.

16. (Original) The herpes viral mutant of claim 2, wherein said cell-specific promoter is endothelial nitric oxide synthase (eNOS) promoter expressed in endothelial cells; vascular endothelial growth factor (VEGF) receptor (flk1) promoter expressed in endothelial cells; insulin promoter expressed in beta cells of the pancreas; promoter of gonadotropin-releasing hormone receptor gene expressed in cells of the hypothalamus; matrix metalloproteinase 9 promoter, expressed in osteoclasts and keratinocytes; promoter of parathyroid hormone receptor expressed in bone cells; or dopamine beta-hydroxylase promoter expressed in noradrenergic neurons.

17. (Currently amended) A method for selectively killing neoplastic cells ~~that overexpress a known tumor-specific protein~~ using a herpes viral mutant, comprising:

infecting ~~said~~ neoplastic cells with ~~said~~ a herpes viral mutant, wherein said neoplastic cells overexpress a known tumor-specific protein, and said viral mutant ~~comprising~~ comprises:

(a) a deletion or inactivating mutation in a gene encoding γ34.5; and

(b) an insertion of at least one copy of said γ34.5 gene under the transcriptional control of a ~~the~~ promoter of said tumor-specific protein, such that said promoter drives expression of said γ34.5 gene; and

selectively killing said neoplastic cells.

18. (Original) The method of claim 17, wherein said neoplastic cells are nervous system neoplastic cells.

19. (Original) The method of claim 18, wherein said nervous system neoplastic cells are central nervous system neoplastic cells.

20. (Original) The method of claim 17, wherein said neoplastic cells are peripheral neoplastic cells.

21. (Original) The method of claim 20, wherein said peripheral neoplastic cells are metastatic colon cells.

22. (Original) The method of claim 17, wherein said herpes viral mutant further comprises at least one additional endogenous deletion or inactivating mutation of a herpes viral gene.

23. (Original) The method of claim 22, wherein said additional endogenous deletion or inactivating mutation of a herpes viral gene is in a gene that encodes ribonucleotide reductase (RR), thymidine kinase (TK), uracil DNA glycosylase (UNG), or dUTPase.

24. (Currently amended) The method of claim 17, wherein said viral mutant is Myb34.5 <u>as represented by ATCC Patent Deposit Designation PTA-4963</u>.

25. (Original) The method of claim 17, wherein said viral mutant further comprises a suicide gene that activates a chemotherapeutic agent, and said method further comprises administering said chemotherapeutic agent.

26. (Original) The method of claim 25, wherein said suicide gene encodes cytochrome P450.

27. (Original) The method of claim 26, wherein said cytochrome P450 is selected from the group consisting of P450 2B1, P450 2B6, P450 2A6, P450 2C6, P450 2C8, P450 2C9, P450 2C11, and P450 3A4.

28. (Original) The method of claim 27, wherein said cytochrome P450 is P450 2B1.

29. (Original) The method of claim 26, wherein said chemotherapeutic agent is cyclophosphamide or ifosfamide.

30. (Currently amended) The method of claim 17, wherein said tumor-specific protein is ~~promoter in said herpes viral mutant is derived from a gene that encodes~~ DF3 (MUC1), alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), prostate specific antigen (PSA), tyrosinase, B-*myb*, or c-*erb*B2.

31. (Currently amended) The method of claim 30, wherein said tumor-specific protein ~~promoter in said herpes viral mutant~~ is B-*myb*.

32. (Currently amended) The method of claim 31, where said herpes viral mutant is Myb34.5 as represented by ATCC Patent Deposit Designation PTA-4963.

33. (Currently amended) A method for selectively eliminating a target cell population ~~that overexpresses a known cell-specific protein~~ using a herpes viral mutant, comprising:

infecting ~~said~~ target cells with ~~said~~ a herpes viral mutant, wherein said target cells overexpress a known cell-specific protein, and said viral mutant ~~comprising~~ comprises:

(a) a deletion or inactivating mutation in a gene encoding γ34.5; and

(b) an insertion of at least one copy of said γ34.5 gene under the transcriptional control of ~~the~~ a promoter of said cell-specific protein, such that said promoter drives expression of said γ34.5 gene; and

selectively eliminating ~~a target cell population~~ said target cells.

34-35. Cancelled

36. (Currently amended) The method of claim 33, wherein said ~~promoter of said~~ cell-specific protein is: endothelial nitric oxide synthase (eNOS) ~~promoter~~ expressed in endothelial cells; vascular endothelial growth factor (VEGF) receptor (flk1) ~~promoter~~ expressed in endothelial cells; insulin ~~promoter~~ expressed in beta cells of the pancreas; ~~promoter of~~ gonadotropin-releasing hormone receptor gene expressed in cells of the hypothalamus; matrix metalloproteinase 9 ~~promoter~~ expressed in osteoclasts and keratinocytes; ~~promoter of~~ parathyroid hormone receptor expressed in bone cells; or dopamine beta-hydroxylase ~~promoter~~ expressed in noradrenergic neurons.